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TROPICAL STORM CLASSIFICAITON

Using NOAA Data

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AGENDA

BUSINESS OBJECTIVE

GOAL

Create a model that takes in tropical cyclone tracking data and classifies accurately whether readings indicate that a storm is a severe Tropical Storm or a less disruptive disturbance.

STAKEHOLDERS

The resulting model will be used by meterologists to understand whether an incoming storm is a major threat to a certain area, and therefore inform news agenices, local governments, and the public to prepare accordingly.

DATA BACKGROUND

Source

The National Oceanic and Atmospheric Administration's International Best Track Archive for Climate Stewardship (IBTrACS) project complies data from many agencies worldwide to provide best estimates for storms' track and intensity.

Challenges

Because the data is pulled from many separate agenices worldwide, many features are duplicative, inconsistent, or difficult to interpret. The data documentation is in fact full of caveats.


Blue line represents sample hurricane track from dataset

METHODOLOGY

Several model types were run to determine the best methodology. The chosen model type was a decision tree.

Key performance indicators included recall and accuracy scores of the models, which illustrate how well they make predictions.

The model was optimized to avoid false negatives, i.e. instances where a severe storm is misclassified.
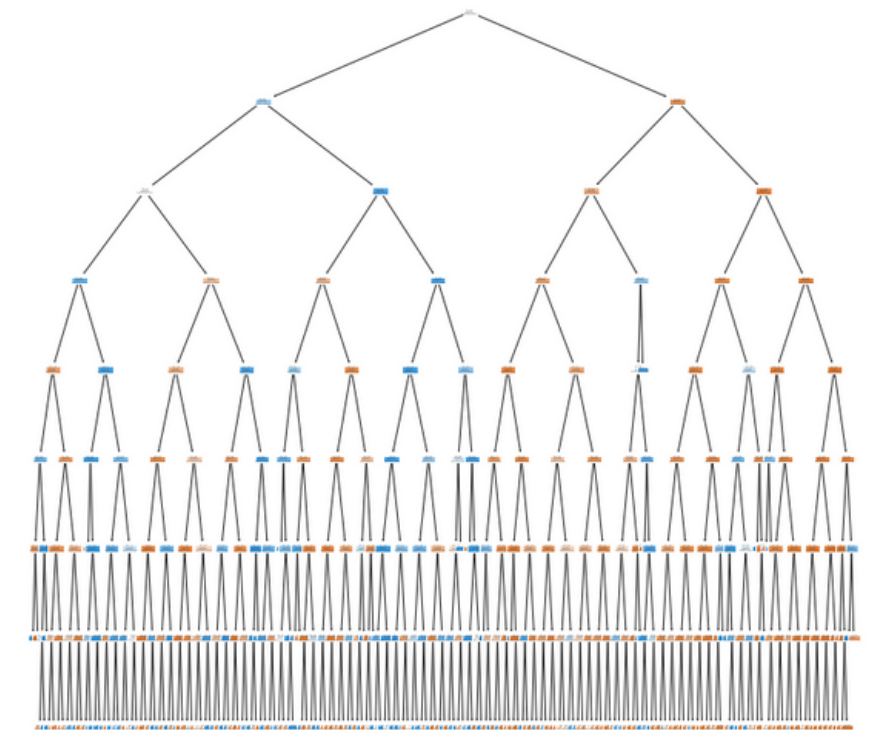
Results

The model achieved a high recall score as compared to others. It also can perfectly predict true positives.

Areas where the model could be improved include overall accuracy, and precision in predicting true negatives, which is where most of the error comes from.
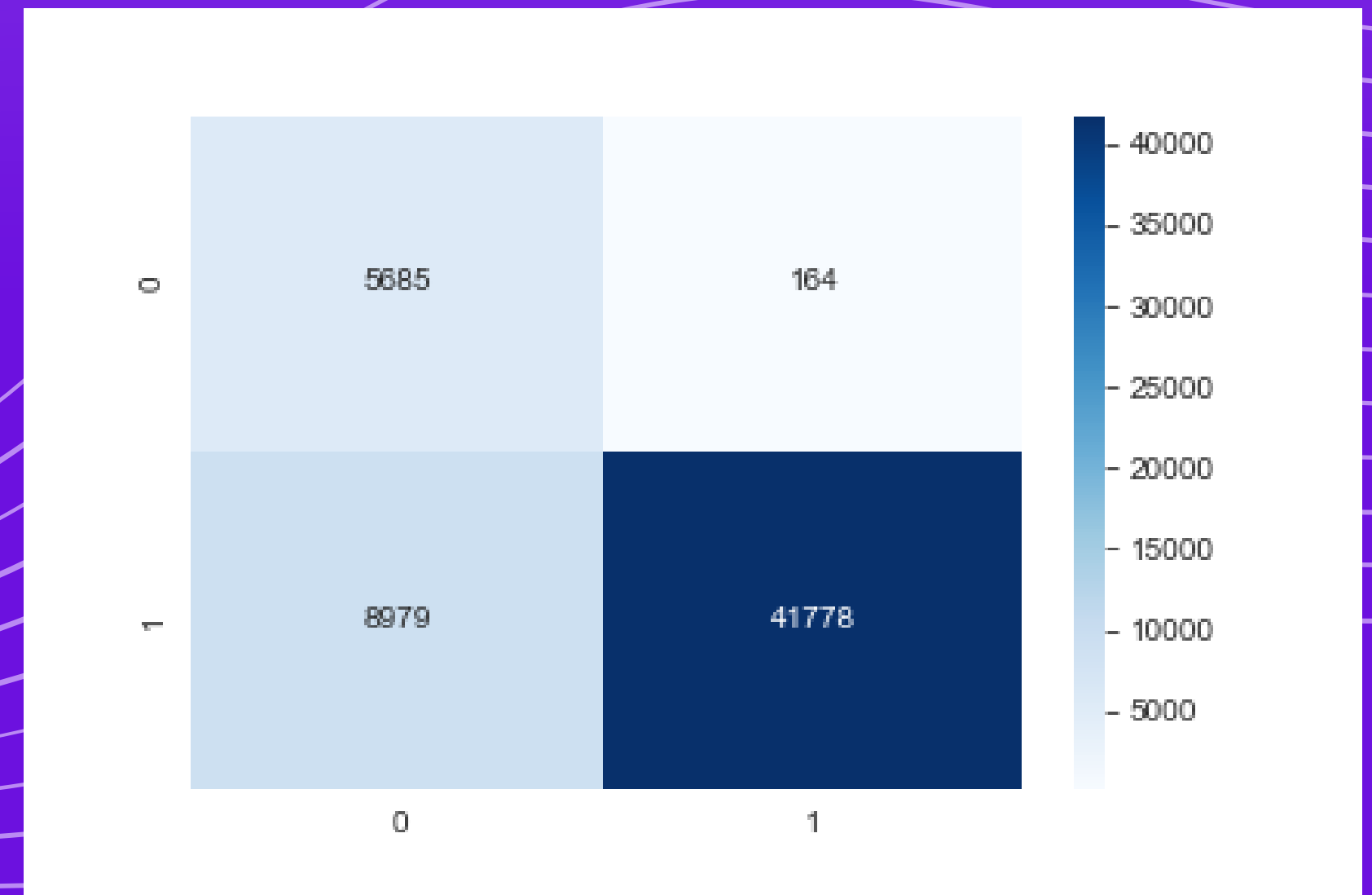
RECOMMENDATIONS/ FUTURE WORK

KEEP TUNING MODEL

The decision tree can be further tuned to reduce error.

REVISIT FEATURES

Consider removing features to get better predictions.

RE-EXAMINE DATA

Take further time to examine/understand NOAA data and their methodology

THANK
YOU!